

Abstract

Novel insulin derivatives having a rapid onset of action

The present invention relates to insulin derivatives which in comparison to human insulin, have an accelerated onset of action, to a process for their preparation and to their use, in particular in pharmaceutical preparations for the treatment of diabetes mellitus.

In particular, the present invention relates to insulin derivatives or physiologically tolerable salts thereof in which asparagine (Asn) in position B3 of the B chain is replaced by a naturally occurring basic amino acid residue and at least one amino acid residue in the positions B27, B28 or B29 of the B chain is replaced by another naturally occurring amino acid residue, it optionally being possible for asparagine (Asn) in position 21 of the A chain to be replaced by Asp, Gly, Ser, Thr or Ala and for phenylalanine (Phe) in position B1 of the B chain and the amino acid residue in position B30 of the B chain to be absent.